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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT'S RESPONSE TO THE JULY 29, 2004 OFFICE ACTION

APPLICANTS: Hetzer et al. CONFIRMATION NO. 6272
SERIAL NO.: 09/911,811 GROUP ART UNIT: 2853
FILED: July 24, 2001 EXAMINER: Leonard S. Liang
TITLE: "ARRANGEMENT AND METHOD FOR DATA FOLLOW-UP
FOR WARM-UP CYCLES OF INK JET PRINT HEADS"

MAIL STOP AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

S I R:

Applicants and their counsel have carefully reviewed the Office Action dated July 29, 2004, but believe the claims in their present form are patentable over the references relied upon by the Examiner. Reconsideration of the application in view of the following arguments in support of patentability is therefore respectfully requested.

REMARKS

In response to the previously-made restriction requirement, Applicants elected claims 1-12 without traverse, and the Examiner stated at the top of page 2, of the July 29, 2004 Office Action that claims 13-23 were withdrawn from consideration.

Nevertheless, the Examiner's rejection encompasses every claim of the application (including previously cancelled claim 24). The purpose of a restriction requirement is to alleviate the Examiner from conducting searching if and when multiple patentably distinct inventions are claimed in the claims. The entire purpose of such a restriction requirement, therefore, it would seem to be inapplicable in the present situation, wherein the Examiner has nevertheless proceeded to render a

complete Office Action on the merits of all of the claims. The Examiner has already made the effort to search and consider every claim of the application, and therefore maintaining the restriction requirement at this point would serve no useful purpose. Even though Applicants made the previous election without traverse, reconsideration of the restriction requirement is respectfully requested, in view of the subsequent actions of the Examiner, and restoration of claims 13-23 to active status is respectfully requested as well.

Since the Examiner's rejection addressed all claims 1-23, Applicants' response will address all claims 1-23 as well. As previously noted, claim 24, which was included in the Examiner's rejection has been previously cancelled and therefore this claim will not be addressed in Applicants' remarks below.

In the July 29, 2004 Office Action, claims 1-4, 6-8, 10-17 and 20-22 (as well as cancelled claim 24) were rejected under 35 U.S.C. §103(a) as being unpatentable over Bullock et al. in view of Barton. Claims 5 and 9 were rejected under 35 U.S.C. §103(a) in view of Bullock et al. and Barton, further in view of Berson. These rejections are respectfully traversed for the following reasons.

In the final rejection dated August 6, 2003 that was made before prosecution was reopened after Appellants filed their Appeal Brief, the Examiner had relied on the Bullock et al. reference by itself as an anticipating reference with regard to claims 1-4, 6-8, 10-17 and 20-22. Applicants presented a two-part argument traversing that anticipation rejection. First, Applicants argued that there is no sensor disclosed in the Bullock et al. reference that senses or measures ambient temperature. The Examiner had previously contended that a thermal sense resistor (referred to as the TSR in the Bullock et al. reference) measures ambient temperature, but Applicants

presented arguments that the TSR instead measures the *printhead* temperature as explicitly explained in the Bullock et al. reference.

Applicants' second argument was that the algorithm disclosed in the Bullock et al. reference that make use of data from the TSR is not an algorithm for warming up the device. Therefore, there is no place in this algorithm for making use of an ambient temperature measurement in the manner disclosed and claimed in the present application, since the disclosed algorithm in the Bullock et al. reference is designed to make use of the *printhead* temperature measured by the TSR.

The Examiner now acknowledges that the Bullock et al. reference does not disclose a sensor connected to the drive unit for measurement of ambient temperature, and does not disclose a control unit programmed to implement at least one measurement of the ambient temperature with the sensor, and to determine warm-up data for a fast start for a current warm-up cycle dependent on the ambient temperature and dependent on at least one predetermined condition (at page 5 of the Office Action). The Examiner is now relying on the Barton reference as disclosing a sensor connected to a drive unit for measurement of ambient temperature, wherein the sensor operates in conjunction with a printer memory. The Examiner stated it would have been obvious to a person of ordinary skill in the art to incorporate the ambient temperature sensor of Barton into the invention of Bullock et al. The Examiner stated a motivation for doing so would be to gain the benefit of selecting the printer's optimal operational subroutines, and the Examiner stated the combination "naturally suggests" the control unit being programmed to implement at least one measurement of the ambient temperature with the sensor and dependent on at least one predetermined condition. The Examiner further stated that Bullock et

al. disclose calibration of the TSR and the use of energy parameters as examples of memory parameters, and the Examiner stated it is well known to those of ordinary skill in the art that these parameters are crucial for a warm-up operation, since a warm-up operation usually involves heating of the printhead.

Applicants do not disagree that the Barton reference teaches the measurement of ambient temperature, and most likely there are many other patents that could have been referenced for this general teaching. Neither the Bullock et al., nor the Barton reference, however, disclose or suggest using an ambient temperature measurement in the context of a warm-up cycle. As the Examiner has noted, warm-up operation conventionally involves heating of the printhead, and this is why the Bullock et al. reference explicitly make use of the TSR for measuring the *printhead* temperature. Because Bullock et al. explicitly disclose a sensor that measures the printhead temperature, rather than the ambient temperature, there is no basis to assume that it would have been obvious to replace the TSR in Bullock et al. with an ambient temperature sensor. As noted above, the Bullock et al. routine is *not* a routine that makes use of an ambient temperature measurement, but is explicitly designed to make use of the temperature sensed by the TSR, which is the *printhead* temperature. Those of ordinary skill in the art would immediately recognize that in an algorithm of that type, one cannot simply substitute one sensor for another, and assume that the algorithm, can proceed without any further changes. If the TSR in Bullock et al. were not a sensor that measures the printhead temperature, there is no teaching in the Bullock et al. reference, or any other reference of record, that the Bullock et al. algorithm could proceed in the same manner as intended.

The Examiner has noted that the Bullock et al. reference is for monitoring “real time” operation of the printer described therein, and the Examiner has argued that such “real time” operation encompasses a warm-up cycle. While this may be true, the clear teaching of Bullock et al. is that, even during such a warm-up cycle (which is never mentioned at all in the Bullock et al. reference), Bullock et al. would still continue to measure the *printhead* temperature, rather than the ambient temperature. There is no discussion in any of the references of record that it is more beneficial to measure and use the ambient temperature in a warm-up cycle, as compared to the printhead temperature, for example. Only the present Applicants have had the insight to make use of this particular type of temperature measurement in the context of a warm-up cycle.

Applicants submit that modifying the Bullock et al. reference to not use the printhead temperature, as sensed by the TSR, would destroy the intended operation of Bullock et al., or at least place the effective operation thereof in question. There is no teaching in any of the references that the Bullock et al. algorithm could proceed as intended while making use of an ambient temperature measurement, instead of the printhead temperature measurement, as explicitly disclosed therein.

Because Bullock et al. explicitly make use of a measurement of the printhead temperature, the algorithm described in the Bullock et al. reference embodies specific mathematical calculations for deriving the desired information from this measured printhead temperature. Those of ordinary skill in the art in the field of printer design know that those equations would not be applicable if a temperature other than the printhead temperature were being measured, and therefore those of ordinary skill in the field of printer design would be dissuaded from simply replacing

the TSR in Bullock et al. with some other type of temperature sensor. Those of ordinary skill in the field of printer design, therefore, have persuasive reasons for *not* modifying Bullock et al. to replace the TSR with some other type of temperature sensor. The Bullock et al. algorithm simply will not function as intended unless it is the printhead temperature that is measured and used in the algorithm. This factor was fully discussed at pages 13 and 14 of Appellant's Appeal Brief, and those arguments are still considered by the Applicants to be applicable to the present rejection.

Claims 1-4, 6-8, 10-17 and 20-22, therefore would not have been obvious to a person of ordinary skill in the field of printer design under the provisions of 35 U.S.C. §103(a) based on the teachings of Bullock et al. and Barton.

As to the rejection of claims 5 and 9, Applicants do not disagree that the Berson reference provides a general teaching of encrypting a serial number, however, for the reasons noted above simply having knowledge of this general information does not render the subject matter of claims 5 and 9, which embody the subject matter of independent claim 1 therein, as being obvious. The same arguments with regard to Bullock et al. and Barton apply to claims 5 and 9. Claims 5 and 9, therefore, would not have been obvious to a person of ordinary skill in the field of printer design under the provisions of 35 U.S.C. §103(a) based on the teachings of Bullock et al., Barton and Berson.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

Submitted by,

 (Reg. 28,982)

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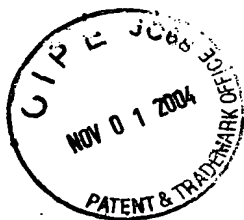
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GROUP ART UNIT: 2853

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SIR:

Transmitted herewith is an amendment in the above-identified application.

☒ No additional fee is required.

The fee has been calculated as shown below.

CLAIMS AS AMENDED						
	(2) CLAIMS REMAINING AFTER AMENDMENT		(4) HIGHEST NO. PREVIOUSLY PAID FOR	(5) PRESENT EXTRA	(6) RATE	(7) ADDITIONAL FEE
TOTAL CLAIMS	*24	MINUS	24	X 1	() X 9.00 (X) X 18.00	\$
INDEP. CLAIMS	*2	MINUS	3	X	() X 42.00 () X 84.00	
Application amended to contain any multiple dependent claims not previously paid for.				() YES () NO	() \$140.00 () \$280.00 ONE TIME	
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT					\$00.00	

* If the entry in Column 2 is less than the entry in Column 4, write "0" in Column 5.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20 write "20" in this space.

☐ Applicants petition the Commissioner of Patents and Trademarks to extend this time for response to the Office Action dated _____ for _____ months so that the period for response is extended to _____. A check in the amount of \$_____ is attached to cover the cost of the extension. Any deficiency or overpayment should be charged or credited to deposit account No. 501519. A duplicate copy of this sheet is enclosed.

☐ A check in the amount of \$_____ is attached.

☐ A check for \$_____ accompanying IDS under 37 CFR 1.97(c) is attached

☐ A check for \$_____ and Petition for Consideration of IDS under 37 CFR 1.97(d) is attached.

☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment to account No. 501519. A duplicate of this sheet is enclosed.

When phoning re this application, please call (312) 258-5500.

SCHIFF HARDIN & WAITE (Customer Number 26574)

BY Steven H. Noll (28,982)

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on October 28, 2004

Steven H. Noll

NAME OF APPLICANT'S ATTORNEY

SIGNATURE

October 28, 2004

DATE